

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY
(Chapter II of the Patent Cooperation Treaty)



(PCT Article 36 and Rule 70)

REC'D 28 FEB 2006

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Applicant's or agent's file reference PCT04-070	FOR FURTHER ACTION See Form PCT/IPEA/416	
International application No. PCT/KR2004/002880	International filing date(day/month/year) 08 NOVEMBER 2004 (08.11.2004)	Priority date (day/month/year) 07 NOVEMBER 2003 (07.11.2003)
International Patent Classification (IPC) or national classification and IPC A61K 31/05(2006.01)i		
Applicant OAKY NATURAL CO., LTD et al		

- This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
- This REPORT consists of a total of 4 sheets, including this cover sheet.
- This report is also accompanied by ANNEXES, comprising:
 - ☐ (sent to the applicant and to the International Bureau) a total of _____ sheets, as follows:
 - ☐ sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).
 - ☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.
 - ☐ (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in electronic form only, as indicated in the Supplemental Box relating to Sequence Listing (see Section 802 of the Administrative Instructions).
- This report contains indications relating to the following items:
 - ☒ Box No. I Basis of the report
 - ☐ Box No. II Priority
 - ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
 - ☐ Box No. IV Lack of unity of invention
 - ☒ Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
 - ☐ Box No. VI Certain documents cited
 - ☐ Box No. VII Certain defects in the international application
 - ☐ Box No. VIII Certain observations on the international application

Date of submission of the demand 07 JUNE 2005 (07.06.2005)	Date of completion of this report 13 JANUARY 2006 (13.01.2006)
Name and mailing address of the IPEA/KR  Korean Intellectual Property Office 920 Dunsan-dong, Seo-gu, Daejeon 302-701, Republic of Korea Facsimile No. 82-42-472-7140	Authorized officer KIM, Hee Jin Telephone No. 82-42-481-5412 

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/KR2004/002880

Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
 - ☒ This report is based on translations from the original language into the following language English which is the language of a translation furnished for the purposes of:
 - ☐ international search (under Rules 12.3 and 23.1(b))
 - ☒ publication of the international application (under Rule 12.4)
 - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the elements of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:
 - ☒ the international application as originally filed/furnished

 - ☐ the description:
 - pages _____ as originally filed/furnished
 - pages* _____ received by this Authority on _____
 - pages* _____ received by this Authority on _____

 - ☐ the claims:
 - pages _____ as originally filed/furnished
 - pages* _____ as amended (together with any statement) under Article 19
 - pages* _____ received by this Authority on _____
 - pages* _____ received by this Authority on _____

 - ☐ the drawings:
 - pages _____ as originally filed/furnished
 - pages* _____ received by this Authority on _____
 - pages* _____ received by this Authority on _____

 - ☐ the sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:
 - ☐ the description, pages _____
 - ☐ the claims, Nos. _____
 - ☐ the drawings, sheets _____
 - ☐ the sequence listing (*specify*): _____
 - ☐ any table(s) related to sequence listing (*specify*): _____

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
 - ☐ the description, pages _____
 - ☐ the claims, Nos. _____
 - ☐ the drawings, sheets _____
 - ☐ the sequence listing (*specify*): _____
 - ☐ any table(s) related to sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/KR2004/002880

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1-11	YES
	Claims		NO
Inventive step (IS)	Claims	5-11	YES
	Claims	1-4	NO
Industrial applicability (IA)	Claims	1-11	YES
	Claims		NO

2. Citations and explanations (Rule 70.7)

Reference is made to the following documents:

D1 : Journal of Nutritional Biochemistry, 1996, 7(1), pp.23-8

D2 : Molecular and Cellular Biochemistry, 2000, 209(1&2), pp.47-53

D3 : Food and Chemical Toxicology, 2002, 40(10), pp.1403-13

D4 : Han'guk Nonghwa Hakhoechi, 2001, 44(4), pp.262-8

D5 : Kogakubu Kenkyu Hokoku, 1991, 37, pp.41-50

D1 discloses the antioxidant effect of eugenol on CCl₄-induced erythrocyte damage in rats.

D2 showed that vanillin has a significant ability to quench singlet oxygen, a reactive species responsible for damage to membranes in mammalian tissues.

D3 describes the scavenging property of cresol against H₂O₂, hypochlorite, superoxide and hydroxyl radicals.

D4 discloses that wood vinegar liquors were extracted using dichloromethane and the extracts were separated into an acidic, phenolic, neutral and basic fraction by acid or alkali treatment, and the compositions of each fraction were analyzed. A total 103 compounds, including guaiacol, 4-methylguaiacol, vanillin, acetovanillin, syringol and 4-methylsyringol were identified in D4.

D5 discloses the solvent extraction and characterization of constituents of wood vinegar liquor to identify guaiacol, 4-methylguaiacol, 4-ethylguaiacol, syringol, 4-methylsyringol, 4-ethylsyringol, vanillin, and syringaldehyde.

Claims 1-2 of the present invention relates to a pharmaceutical composition containing guaiacol derivatives(include vanillin and eugenol) and syringol derivatives extracted from natural wood vinegar.

Claims 3-4 relate to a pharmaceutical composition for the treatment of oxidative damage containing the same compounds as that of claim 1.

(Continued on Supplemental Sheet)

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/KR2004/002880

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.
Continuation of:

Claim 5 and claim 6 respectively relate to a pharmaceutical composition for the control of blood sugar and for the improvement of bloodstream containing the same compounds as that of claim 1.

Claims 7-9 relates to a pharmaceutical composition for the hangover relief containing the same compounds as that of claim 1.

Claims 10-11 relates to a pharmaceutical composition for the treatment of atopy dermatitis containing the same compounds as that of claim 1.

1. Novelty

Although D1 to D3 describe the antioxidant activity of vanillin, eugenol and cresol, D1 to D3 do not disclose that wood vinegar liquor has guaiacol derivatives like vanillin, eugenol or cresol.

Therefore, the claimed subject-matter may be considered as novel over the available prior art(Article 33(2) PCT).

2. Inventive Step

(1) Concerning claims 1-4

From the disclosure of D1 to D3, it is known that guaiacol derivatives has an antioxidant activity. The composition of wood vinegar, which is composed of guaiacol derivatives(include vanillin, eugenol, cresol) and syringol derivatives was also disclosed in D4 or D5.

Consequently, a skilled person can invent the subject matter of claims 1-4 without difficulty by simply combining D1 or D2 or D3 and D4 or D5.

(2) Concerning claims 5-11

The subject matter of claims 5-11 is not obvious to a skilled person in the art because the activity of wood vinegar claimed in claims 5-11 is not related with antioxidant activity. Therefore, the inventive step of claims 5-11 can be acknowledged(Article 33(3) PCT).

3. Industrial applicability

Claims 1-11 have industrial applicability(Article 33(4) PCT).